SP-104-AIML Active Learning Management

CS 4850 – Fall 2025

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		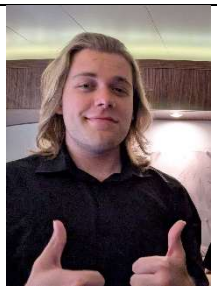	
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Our original project focused on developing an image processing system based on satellite images, with an emphasis on applying an active learning system that can be used for efficient labeling and model improvement. While this provided us with a strong foundation in what we were aiming for, problems arose with the implementation of how such a system could be implemented without external knowledge, specifically on a topic called hyperspectral imaging. Given our amount of research and extensive talk on the idea, we chose to go in a different direction, specifically with our dataset, as we did not know enough information on hyperspectral imaging and did not want to proceed to turn our project into a research project, as we have a goal of wanting to achieve a physical product to present rather than theoretical research. Given this change, we decided to withdraw from using the satellite image dataset to use the CheXpert dataset, a dataset that switches focus to the health field and uses various chest exams to classify possible thoracic diseases. This dataset contains over a hundred thousand images of various chest exams from over thirty thousand people. Our goal with this dataset is to take the same idea of creating an active learning framework using modAL and classifying these trained images based on the type of disease that is seen within the image.

Reference: https://www.kaggle.com/datasets/nih-chest-xrays/data/data